

ABSTRACT

A system and method for utilizing a surface located oscillator to generate seismic signals at a downhole location. The system includes a vibratory source for generating axial vibrational energy in a tubular string anchored in the borehole at a suitable location. The vibratory source may be operated at a predetermined frequency or may generate a swept frequency signal. The axial vibrations are transmitted through the tubular string and impart a seismic signal through the anchor to the formation.. In different configurations, the system imparts broadband seismic signals into the formation. Sensors are mounted on the vibratory source and downhole anchor for monitoring the system operation. Seismic receivers are deployed on the surface, in offset wells, or in the source well. Signals from the receivers are transmitted to a control unit. The control unit utilizes the sensor and receiver signals to control the operation of the vibratory source.

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